

Removal of Nasogastric Tube Accidentally Stitched to Roux-en-Y Oesophagojejunostomy Following a Radical Gastrectomy for Stomach Cancer

Case report and review of the literature

*Ayman Z. Azzam,^{1,3} Kareem A. Azzam,² Tarek Amin³

إزالة أنبوب أنفي-معدي مشتبك مع مفاغرة المريء من نوع Roux-en-Y عن طريق الخطأ بعد استئصال كلي لمعدة مصابة بالسرطان
تقرير حالة واستعراض المنشورات السابقة

أيمن زكي عزام، كريم أيمن عزام، طارق أمين

ABSTRACT: Nasogastric tubes (NGTs) are important for feeding, stenting and decompression after gastrointestinal surgeries, particularly in the upper gastrointestinal tract. Resistance in the removal of a NGT is a rare surgical complication and may be due to a knot in the tube or a stitch anchoring the tube to an *anastomosis*. We report a 41-year-old male patient who was admitted to the King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia, in 2015 with stomach cancer. He underwent a radical total gastrectomy with a Roux-en-Y oesophagojejunostomy. One week after the surgery, removal of the NGT was attempted; however, this was very difficult and the proximal end of the tube was cut off as a temporary measure. Six weeks later, an upper gastrointestinal tract endoscopy revealed that the distal end of the NGT had been accidentally stitched to the Roux-en-Y oesophagojejunostomy. The stitch was removed and the rest of the NGT was successfully extracted using a snare.

Keywords: Enteral Nutrition; Gastrointestinal Intubation; Roux-en-Y Anastomosis; Gastrectomy; Case Report; Saudi Arabia.

الملخص: أنابيب المعدة الأنفية مهمة للتغذية وفتح أو إزالة الضغط على المنطقة الجراحية في قناة الهضم، بالأخص في الجزء العلوي للجهاز الهضمي، لكن مقاومة هذه الأنابيب للإزالة تعتبر من المضاعفات الجراحية النادرة الحدوث التي قد يكون المتسبب فيها هو عقدة في الأنبوب أو غرزة تشبك الأنبوب بالمفاغرة، نعرض هنا حالة عن مريض يبلغ من العمر 41 عاماً تم إدخاله إلى مستشفى الملك فيصل التخصصي ومركز الأبحاث في الرياض بالمملكة العربية السعودية في عام 2015 وكان مصاباً بسرطان المعدة، خضع لعملية استئصال المعدة الكلي ومفاغرة المريء مع الصائم بطريقة Roux-en-Y، بعد أسبوع واحد من الجراحة، تم محاولة إزالة أنبوب المعدة الأنفي، مع شيء من الصعوبة، قرر قطع نهاية طرف الأنبوب جراحياً كتدبير مؤقت، إلا أنه بعد ستة أسابيع تم عمل منظار علوي للجهاز الهضمي فاكشف أن طرف الأنبوب البعيد قد تم خياطته عن طريق الخطأ مع الفاغرة، فتمت إزالة الغرزة واستئصال بقية الأنبوب العالق بنجاح باستخدام أداة انتزاع جراحي (سنار).

الكلمات المفتاحية: التغذية المعوية؛ التنبيب المعدي؛ مفاغرة Roux-en-Y؛ استئصال المعدة؛ تقرير حالة؛ المملكة العربية السعودية.

THE PLACEMENT OF A NASOGASTRIC TUBE (NGT) for feeding, stenting and gastric decompression is common after major surgeries—especially gastrointestinal surgeries with critical anastomoses, such as a radical total gastrectomy and Roux-en-Y oesophagojejunostomy—and rarely results in complications.^{1,2} The accidental stitching of an NGT to a gastrointestinal *anastomosis* is an infrequent surgical complication.^{3–5} This report describes the successful removal of an NGT which had been accidentally stitched to an *anastomosis* in a patient with stomach cancer after a radical total gastrectomy and Roux-en-Y oesophagojejunostomy.

Case Report

A 41-year-old male patient was admitted to the King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia, in 2015 with stomach cancer. He subsequently underwent a radical total gastrectomy with a Roux-en-Y oesophagojejunostomy, intraoperative radiation and hyperthermic intraperitoneal chemotherapy. Immediately following the procedure, the patient was extubated and sent to the Intensive Care Unit in a satisfactory condition. During the postoperative period, oral feeding was discontinued for one week and the patient was fed via NGT. Clinical laboratory tests

¹Department of General Surgery, Faculty of Medicine, Alexandria University, Alexandria, Egypt; ²Cheeloo College of Medicine, Shandong University, Jinan, Shandong, China; ³Department of Surgical Oncology, Oncology Center, King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia

*Corresponding Author's e-mail: aazzam70@yahoo.com

were performed on a daily basis. One week after the surgery, a contrast meal was administered, which showed that the *anastomosis* was widely patent with no evidence of leakage or obstruction. The decision was made to remove the NGT so that the patient could begin a clear liquid diet.

However, the NGT was very resistant and could not be removed by conventional means. An upper gastrointestinal tract (UGIT) endoscopy was not considered an option so early due to the risk of rupturing the *anastomosis*. Surgical exploration was also not a viable choice so as to avoid a prolonged hospital stay and any delay in initiating a postoperative chemotherapy regimen. After an otolaryngology consultation, the removal of the NGT was attempted under general anaesthesia. The patient was intubated and a mouth gag was used to open the patient's mouth in order to examine the oral cavity. The nasal cavity and the nasopharynx were examined via surgical telescope and the NGT was found to be freely mobile. An upper rigid oesophagoscopy was also performed, but the cause of the difficulty in removing the NGT could not be identified. Accordingly, the proximal portion of the NGT relative to the nose was cut off, leaving behind the distal portion for later removal once the patient had completely recovered.

The patient tolerated the procedure well with no complications. A second contrast meal administered the following day showed no evidence of leakage, enabling the patient to start a liquid-based diet and undergo postoperative chemotherapy treatment. Six weeks later, an UGIT endoscopy was done and revealed that the distal end of the NGT had been accidentally fixed with a single stitch to the Roux-en-Y oesophagojejunostomy. Subsequently, the stitch was cut and the remaining portion of the NGT was removed using an endoscopic snare. Soon after, the patient was discharged in good condition.

Discussion

Unexpected complications can arise during the insertion or removal of an NGT. Following gastric surgery, such as a radical gastrectomy, a mechanically stuck NGT can be indicative of a stitch anchoring the tube. The accidental iatrogenic suturing of an NGT is a rare complication but may nevertheless occur, especially if the NGT passes through an *anastomosis*.³⁻⁵ This serious complication is difficult to manage due to its rarity; moreover, little information is available in the literature to provide guidance for physicians when dealing with such complications.⁶ Any attempt to forcibly remove the NGT should be avoided as this may lead to serious

complications, including dehiscence of the *anastomosis*, perforation of the gut and profuse bleeding.⁷

In the current case, removing as much of the proximal end of the NGT as possible was beneficial as it enabled the patient to continue eating, decreased his hospital stay and permitted the early initiation of postoperative chemotherapy, while allowing sufficient time for the *anastomosis* to heal. In addition, an UGIT endoscopy was deemed the investigation of choice as it allows for the complete assessment and diagnosis of the problem as well as the relatively safe removal of the NGT. However, an endoscopy may itself cause dehiscence of the *anastomosis*, especially if performed at an early postoperative stage when the *anastomosis* has not yet completely healed.⁸ As such, this procedure should be delayed for at least two weeks after the surgery, based on the wound healing process and the strength of the suture material.⁵

Conclusion

Difficulty in the removal of an NGT following gastric surgery involving a Roux-en-Y oesophagojejunostomy may be due to the presence of a stitch anchoring the tube to the *anastomosis*, as in the present case. Initially, partial removal of the proximal end of the NGT is recommended to allow sufficient time for the *anastomosis* to heal; subsequently, the distal end of the tube can be removed at a later date via UGIT endoscopy.

References

1. Akbaba S, Kayaalp C, Savkilioglu M. Nasogastric decompression after total gastrectomy. *Hepatogastroenterology* 2004; 51:1881-5.
2. Santhanam V, Margaron M. Removal of self-knotted nasogastric tube: Technical note. *Int J Oral Maxillofac Surg* 2008; 37:384-5. doi: 10.1016/j.ijom.2007.11.020.
3. Urschel JD, Stockburger HJ. Endoscopic extraction of an entrapped nasogastric tube. *Am Surg* 1990; 56:730-2.
4. Reissman P, Udassin R, Goldin E, Durst AL. Management of an inadvertently sutured nasogastric tube after Nissen fundoplication. *Gastrointest Endosc* 1994; 40:260-1. doi: 10.1016/S0016-5107(94)70191-1.
5. Chen CN, Lee WJ, Cheng TJ, Chang KJ. Endoscopic removal of nasogastric tube sutured unintentionally to gastrojejunostomy. *Surg Laparosc Endosc* 1997; 7:359-60.
6. Hirwa KD, Toshiwal N. Knotted nasogastric tube in the posterior nasopharynx: A case report. *Qatar Med J* 2016; 2016:11. doi: 10.5339/qmj.2016.11.
7. Mahmood A, Joseph E, Robinson RB, Akhras J, McKany M, Gordon W. The role of endoscopy in nasogastric tube removal following esophageal surgery: A case report. *Int J Surg* 2007; 5:342-4. doi: 10.1016/j.ijssu.2007.04.020.
8. ASGE Standards of Practice Committee; Ben-Menachem T, Decker GA, Early DS, Evans J, Fanelli RD, et al. Adverse events of upper GI endoscopy. *Gastrointest Endosc* 2012; 76:707-18. doi: 10.1016/j.gie.2012.03.252.